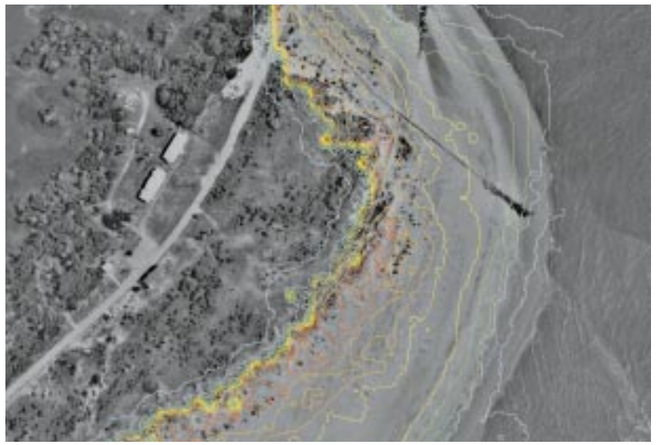
Laser maps shoreline change

NOAA's Twin Otter carries the Airborne Topographic Mapper.



Data derived from NOAA's laser beach mapping project, layered on top of an orthophotograph, creates a topographic map.

A laser developed by NASA to map polar ice sheets may become an important new tool in the effort to preserve America's beaches.

Scientists at NOAA's Coastal Services Center are working to convert data gathered with the NASA-developed technology into viable products that will enable state coastal zone managers to document shoreline movement.

When compared to traditional beach surveys, the new technology will offer a greater number of survey points in a shorter amount of time and at a greatly reduced cost. Annual surveys of this type help scientists and coastal managers understand long-term erosion trends, estimate the effects of beach renourishment and erosion-control devices, and establish setback lines.

Project scientists use a laser called the Airborne Topographic Mapper, which is flown along the coast in a NOAA aircraft. The laser collects 3,000 to 5,000 spot elevations per second as the aircraft flies over the beach at about 60 meters per second (135 mph). Using the laser, along with global positioning system satellite receivers, researchers survey beach elevations to a vertical accuracy of about 10 centimeters.

In October 1997, researchers surveyed portions of the West Coast prior to the arrival of El Niño, the periodic weather phenomenon blamed for harsh winter weather along the Pacific Coast. Later this year, the same area will be surveyed to document how the beaches and cliffs weathered the storms. East Coast surveys were conducted in October 1996 and 1997.

The program's official title is the Airborne LIDAR Assessment of Coastal Erosion, or "ALACE." The project includes three parts: data collection, data processing, and data validation. Also in development is a web-based data delivery system.

In the end, the Center hopes to develop a set of protocols that will allow states to contract with private firms to undertake their own laser-based beach surveys. The data that is produced will conform to national standards, yet states will be able to dictate the specific areas to be surveyed, when the flights are to occur, and the data format.

Partners for this project include NASA and the U.S. Geological Survey. For additional information about laser beach mapping, call Mark Jansen of the NOAA Coastal Services Center at 803-974-6262. The web site address is www.csc.noaa.gov/crs/ALACE/.

New NOAA service group based in New Hampshire

The development and application of innovative technology for monitoring, management, and prevention of water contamination is the underlying theme behind a new partnership between NOAA and the University of New Hampshire (UNH).

Using the national network of National Estuarine Research Reserves as "living laboratories," the Cooperative Institute for Coastal and Estuarine Environmental Technology is looking for innovative solutions to coastal water pollution problems.

The Institute recently released its first national request for project proposals. The request focused on research reserves and was distributed throughout the coastal and estuarine research and management community.

The Institute will be administered jointly by UNH and NOAA's Office of Ocean and Coastal Resource Management. A board of advisors, comprised of four UNH members, two NOAA officials, and representatives of two research reserves and one coastal management program, is chaired by Margaret Davidson, the director of NOAA's Coastal Services Center. This board will advise the University on the Institute's direction and operation.

NOAA and UNH will share the responsibilities of program administration. The interim co-directors are Laurie McGilvray of NOAA (301-713-3155, ext. 158) and Rich Langan of UNH (603-862-2175) The Institute's website address is http://ekman.sr.unh.edu/idems.

The Coastal Information Directory

A new Internet-based searching tool for sources of coast-related data and information, the Coastal Information Directory allows you to simultaneously search various databases throughout the country.

www.csc.noaa.gov/CID/
NOAA Coastal Services Center

Deadline Nears to Apply for Coastal Management Fellowship

Each year the Coastal Management Fellowship program places post-graduate students in coastal management regulatory programs throughout the country. During the two-year fellowship, the students gain valuable experience as they work on specific projects in their chosen field.

The search for fellowship candidates is under way. Contact your local Sea Grant office or NOAA's Coastal Services Center for more information.

Entry deadline for potential fellows: April 6, 1998

NOAA Coastal Services Center
Coastal Management Fellowship Program
http://www.csc.noaa.gov/cms/fellows2.html
or Jan Kucklick at 803-974-6279